

PERSONAL INFORMATION

Family name, First name: Cherevan, Alexey

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Date of birth: 07.06.1988 | 37 years old

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PROFILE

I received my Master's Degree from Moscow State University (2010) and my *Ph.D.* from the University of Münster (2014); I then joined the division of Molecular Materials Chemistry (MMC) of the Vienna University of Technology (TU Wien) as a sub-group leader (2018) and a project PI (2019). Most recently, I became a tenure track **Asst. Professor** (2023) and completed my Habilitation Degree (*Priv.-Doz.*) in the field of Materials Chemistry (2024). Throughout the years I gained a unique set of expertise and hands-on experience with molecular (homogeneous) and solid-state (heterogeneous) photocatalysts – including their synthesis, characterization, and activity evaluation – and now work at the crossroad between the two fields. My expertise further includes in-depth fundamental studies on interfacial processes, kinetics, and mechanisms of (photo)catalytic reactions as well as the design of advanced nanostructures for energy conversion applications. My detailed research profile can be found [here](#).

EDUCATION / DEGREES

- 2015 – 2024** Habilitation (Privatdozent) in Materials Chemistry (16.07.2024)
Technische Universität Wien (TU Wien), Vienna, Austria
Thesis: Photocatalysis for solar fuels: exploring molecular, inorganic, and hybrid photosystems
- 2011 – 2014** Doctor of Natural Sciences (Ph.D.) in Physical Chemistry (16.10.2014)
Westfälische Wilhelms-Universität, Münster, Germany (Advisor Prof. D. Eder)
Thesis: Nanocarbon-inorganic hybrids for photocatalytic water splitting hydrogen production
- 2005 – 2010** Master Degree (MSc) in Chemistry (30.06.2010)
Moscow State University, Moscow, Russia (Advisor Prof. G. Bondarenko)
Thesis: Metal-carbon nanocomposites based on polyacrylonitrile and Cu and Pd metals for dehydrogenation catalysis

RESEARCH EXPERIENCE

- 2023 – now** Tenure-track Assistant Professor (under qualification agreement to become **Assoc. Prof.** in 2026), TU Wien, Vienna, Austria
- 2015 – 2022** University Assistant, TU Wien, Vienna, Austria
- 2014 – 2015** Postdoctoral Fellow, Westfälische Wilhelms-Universität, Münster, Germany
- 2010 – 2011** Junior Research Assistant, Institute of Petrochemical Synthesis of Russian Academy of Science, Moscow, Russia

RESEARCH VISITS

- 2026** Sabbatical at Prof. A. Kafizas [lab](#), Imperial College London, UK.
- 2017** Research stay at Prof. A. Llobet [lab](#), ICIQ, Tarragona, Spain.
- 2016** Research stay at Dr. J. Vilatela [lab](#), IMDEA Materials, Madrid, Spain
- 2012** Research stay at Prof. K. Domen [lab](#), The University of Tokyo, Japan.

AWARDS AND GRANTS

- 2025** Invited talk at the renowned [CPG-Symposium](#) at the University of Vienna
- 2024** ACS Nano **Best Oral Presentation Award** at ISNSC conference
- 2024** **Winner** of the **Best Teacher Award** at TU Wien, Austria
- 2023 – 2027** PI of the **FWF Cluster of Excellence** MECS amounting to **1300K** Euro
- 2022** Finalist for the **Best Teacher Award** at TCH, TU Wien, Austria
- 2021** Chosen for inaugural *ACS Materials Au* **Rising Star** [collection](#)
- 2019 – 2024** PI of the **FWF Stand-Alone Project** (P32801) amounting to **379K** Euro
- 2018/20** Multiple Pro Didactica **Teaching Awards** at the TU Wien, Austria
- 2016/18/21** Three Austrian Research Association (ÖFG) “International Communication” **grants**
- 2015** Nanoscale Horizons **Poster Prize** at the [MC12](#) conference held in York, UK
- 2014** Doctoral thesis with the grade “Summa Cum Laude”
- 2012** Ewald-Wicke **Scholarship** for the stay at the University of Tokyo, Japan
- 2011 – 2014** **Ph.D. Scholarship** of Graduate School of Chemistry, Uni Münster, Germany

GRANTED THIRD-PARTY FUNDING

Overall, more than **2 Million Euro** funding obtained over the past 5 years as principal investigator (PI) and project leader, including

- 2023/07** FFG Take OFF project “H₂ for aviation” | 2023-2024 | **49.000 €** | PI
- 2023/06** OeAD S&T Cooperation project “Versatile modified TiO₂-based nanostructures for photo-induced H₂ production coupled with microplastic degradation” | 2024-2025 | **7.100 €** | Coordinator
- 2023/03** FWF Cluster of Excellence “Materials for Energy Conversion and Storage” | 2023-2028 | **1.299.805 €** | PI
- 2022/12** OeAD S&T Cooperation project “The Study of Efficient Large Area Flexible Perovskite Solar Modules” | 2022-2025 | **15.000 €** | Coordinator
- 2019/11** FWF Stand-Alone Project P32801 “Surface-Immobilized Molecular Chalcogen-based Metalate Clusters for Photocatalysis” | 2020-2024 | **378.966 €** | PI

RESEARCH OUTPUT

Overall, in the past 11 years, I have published **>55 papers** (average impact factor >10, most in high-impact journals incl. *Adv.Mat.*, *Nature Comm.*, *EES*, *ACS Catalysis*, *Adv.Funct.Mat.*, *Adv.En.Mat.*, *Appl.Cat.B.*, *JMCA*, etc. incl. **7 high-profile reviews**) and **2 book chapters**. I have given more than **30 oral, invited** and **highlight** talks at international conferences and also delivered a [TED Talk](#) (>10.000 views online) on *Artificial Photosynthesis*. The Master Thesis of my first student (Jasmin Schubert) was awarded the **Otto Vogl Preis** for the *Best Master Thesis in Chemistry* ([2019](#)) from the Austrian Academy of Sciences.

TEN MOST IMPORTANT PUBLICATIONS

(* indicates me as a corresponding author. A full list of my publications can be found [here](#)):

1. S. Myakala and **A. Cherevan*** “Atomically Precise Cluster Co-Catalysts: Missing Link Towards Heterogenized Photocatalytic Systems” [ACS Nano](#) **2026**, 20, 1, 99-118 | DOI: 10.1021/acsnano.5c15286
2. S M. Weisweiller, A. Ertl, C. Baeckmann, A. Sihag, C. Pichler, F. Kleiz, D. Eder, **A. Cherevan*** “Photocatalytic upcycling of PET into methane, hydrogen and high-value liquid products” [Green Chemistry](#) **2026**, 28, 309-317 | DOI: 10.1002/adma.202305730 | [back cover](#)
3. S. Batool, M. Langer, S. Myakala, M. Heiland, D. Eder, C. Streb and **A. Cherevan*** “Thiomolybdate clusters: from homogeneous catalysis to heterogenization and active sites” [Advanced Materials](#) **2024**, 36, 2305730 | DOI: 10.1039/D5GC03562G
4. S. Batool, S. P. Nandan, S. N. Myakala, A. Rajagopal, J. S. Schubert, P. Ayala, S. Naghdi, H. Saito, J. Bernardi, C. Streb, **A. Cherevan*** and D. Eder “Surface-anchoring and active sites of

- [Mo₃S₁₃]²⁻ clusters as co-catalysts for photocatalytic hydrogen evolution* [ACS Catalysis](#) **2022**, 12, 11, 6641-6650 | DOI: 10.1021/acscatal.2c00972 | [front cover](#)
5. S. Naghdi, **A. Cherevan**, A. Giesriegl, R. Guillet-Nicolas, S. Biswas, T. Gupta, J. Wang, T. Haunold, B. Bayer, G. Rupprechter, M. Toroker, F. Kleitz and D. Eder “*Selective ligand removal to improve accessibility of active sites in hierarchical MOFs for heterogeneous photocatalysis*” [Nature Communications](#) **2022**, 13, 282 | DOI: 10.1038/s41467-021-27775-7
 6. J. Schubert, L. Kalantari, A. Lechner, A. Giesriegl, S. Nandan, P. Ayala, S. Kashiwaya, M. Sauer, A. Foelske, J. Rosen, P. Blaha, **A. Cherevan*** and D. Eder “*Elucidating the formation and active state of Cu co-catalysts for photocatalytic hydrogen evolution*” [JMCA](#) **2021**, 9 (38), 21958-21971 | DOI: 10.1039/D1TA05561E
 7. **A. Cherevan***, S. Nandan, I. Roger, R. Liu, C. Streb, D. Eder „*Polyoxometalates on Functional Substrates: Concepts, Synergies, and Future Perspectives*“ [Advanced Science](#) **2020**, 7, 1903511 | DOI: 10.1002/advs.201903511
 8. J. Schubert, J. Popovic, G. Haselmann, S. Nandan, J. Wang, A. Giesriegl, **A. Cherevan*** and D. Eder “*Immobilization of Co, Mn, Ni, and Fe oxide co-catalysts on TiO₂ for photocatalytic water-splitting reactions*” [JMCA](#) **2019**, 7, 18568-18579 | DOI: 10.1039/C9TA05637H
 9. **A. Cherevan*** and D. Eder “*Dual Excitation Transient Photocurrent Measurement for Charge Transfer Studies in Nanocarbon Hybrids and Composites*” [Advanced Materials Interfaces](#) **2016**, 3, 1600244 | DOI: 10.1002/admi.201600244
 10. **A. Cherevan**, P. Gebhardt, C. J. Shearer, M. Matsukawa, K. Domen and D. Eder “*Interface Engineering in Nanocarbon–Ta₂O₅ Hybrid Photocatalysts*” [Energy & Environmental Science](#) **2014**, 7, 791-796 | DOI: 10.1039/C3EE42558D

SUPERVISION OF GRADUATE STUDENTS

Supervision of interns, bachelor, and master students, as well as co-supervision of Ph.D. students, have been included in my daily routine in the past 15 years (full list can be found [here](#)). Four of my first Ph.D. students already finished their degree with me and I currently directly mentor 2 Ph.D. students working on my projects:

- 2024 – now** Jatin Chauhan, FWF-funded
- 2023 – now** Madeline Weisweiler, FFG-funded
- 2020 – 2024** Stephen Myakala, FWF-funded, holder of the **Chemical Monthly Fellowship** (2023-2024) and awardee of the **Best Poster Award** at EUROMOF2023.
Ph.D. Thesis “*Design and study of organic-inorganic hybrids as photocatalysts for energy and environmental applications*” [\[link\]](#)
- 2020 – 2024** Dr. Samar Batool, FWF-funded
Ph.D. Thesis “*Metal chalcogen based molecular clusters for light-driven hydrogen evolution reaction*” [\[link\]](#)
- 2018 – 2023** Dr. Jasmin S. Schubert, University-funded, holder of the **Otto Vogl Prize** (2019) for the **Best Master Thesis in Chemistry** from the Austrian Academy of Sciences
Ph.D. Thesis “*Earth-abundant co-catalysts for photocatalytic H₂ generation*” [\[link\]](#)
- 2017 – 2023** Dr. Sreejith P. Nandan, holder of the **Christiane Hörbiger Award** (2020) and awardee of the **Best Poster Award** at Nanomat 2019
Ph.D. Thesis “*All-inorganic molecular clusters for photocatalytic water splitting: from homogeneous to heterogenized photosystems*”

TEACHING

I have acquired various teaching experiences throughout the years at the TU Wien. My current position implies a rather heavy teaching involvement and a variety of courses which can be subdivided into lectures (I take part as a sole- or co-lecturer) and labs (I take part as a supervisor, organizer, or student assistant):

- 2025 – now** Co-lecturer – 300.009 “H₂ technologies at TU Wien”

- 2024 – now *Supervisor/Assistant* – 163.206 “Green Chemistry Laboratory Course”
 2023 – now *Co-lecturer* – 163.207 “Green Chemistry: Recent Trends and Innovations”
 2019 – now *Co-lecturer* – 165.103 “Kinetics and Catalysis”
 2018 – 2019 *Co-organizer/Assistant* – 164.289 “Advanced ceramics and electrochemistry”
 2017 – now *Lecturer* – [165.093](#) “Molecule-based and self-assembled materials”
 2016 – 2021 *Co-lecturer* – 165.140 “Physicochemical Methods of Materials Characterization”
 2018 – now *Co-organizer* – 163.145 “Synthesis Laboratory Course”
 2016 – now *Supervisor/Assistant* – 163.145 “Synthesis Laboratory Course”
 2016 – now *Co-lecturer* – 163.177 “Fundamentals of Chemistry”

INSTITUTIONAL RESPONSIBILITIES

- 2024 Convener of the Internationalization Endeavor at the 20th TCH Anniversary Event
 2023 – now *Core Team Member* of the **Social Media Task Force** of the TCH Faculty, TU Wien
 2023/2024 Organization of the institute-wide **Science Days** as a part of the Faculty evaluation process, TU Wien
 2022 – 2025 *Member* of the **Studies Commission** “PhD studies”, TU Wien
 2022 – 2025 *Board member* of the **Young Investigator Academy** of the TCH faculty, TU Wien
 2022 *Proposal Review Committee member* for the TU Wien ProWriting course, TU Wien
 2020 – 2024 *Member* of the faculty council, Department of Technical Chemistry, TU Wien
 2019/20/26 *Organizer* of three Fluorescence/Photoluminescence Workshops jointly conducted by our group and [Picoquant](#), Vienna, Austria

PUBLIC OUTREACH

- 2022-23/10 Participation in the [European Researchers' Night](#), Vienna
 2022-25/05 Participation in the [Langer Nacht der Forschung](#) representing MMC division
 2022-25/04 Participation in the Open Doors Day of the Faculty of Technical Chemistry
 2022 Research news articles in *TUWac Bulletin* ([2022/03](#)), *HydrogenCentral* ([2022/06](#)), *Kurier* (2022/06 [online](#) and in print) and *Terra Mater* ([2022/08](#)).
 2020/10 Speaker at the [TEDx](#) event at TU Wien, available [online](#).
 2018/09 Preparation and realization of the TU Wien contribution to the [“BE OPEN - Science & Society Festival”](#) organized by the Austrian Science Fund, Vienna, Austria

REVIEWING ACTIVITIES / COMMISSIONS OF TRUST

- 2023 – now *External Referee* for DFG (Germany), NRD (Hungary) and NSC (Poland) agencies
 2022 *Guest editor* for an MDPI Catalysts special issue “Towards Single-Site and Single-Atom Photo- and Electrocatalysis”
 2021 – now *Evaluator* for OeAD [Scientific & Technological Cooperation](#) projects, Austria (8)
 2018 – now *Ph.D. opponent/examiner* for 6 PhD Thesis:
 - Ms. Carola Haslinger (supervisor S. Baudis) – TU Wien, Austria (2025).
 - Ms. Lena Puntschner (supervisor G. Parkinson) – TU Wien, Austria (2025).
 - Ms. Lucia Ivanová (supervisor J. Krajčovič) – Brno University of Technology, Czech Republic (2024).
 - Mr. Raffael Rameshan (supervisor B. Klötzer) – Leopold-Franzens-Universität Innsbruck, Austria (2024).
 - Ms. Kamonchanok Roongraung (supervisor S. Chuangchote) – King Mongkut's University of Technology, Thailand (2019).
 - Mr. Alfonso Monreal Bernal (supervisor J. Vilatela) – IMDEA Materials, Madrid, Spain (2018).
 2017 *Reviewer* of a book proposal for Elsevier. Book “Applications and Future Challenges of Functional Nanomaterials”

In addition, I am a regular reviewer of *Nature Communications* (4), *Angewandte Chemie* (8), *Advanced Materials* (6), *Advanced Energy Materials* (3), *Advanced Materials Interfaces* (8),

Catalysis Today (1), *Small* (3), *ACS Applied Materials Interfaces* (3), *ACS Sustainable Chemical Engineering* (1), *ACS Energy Fuels* (2), *Applied Sciences*, *Applied Physics A* (3), *International Journal of Hydrogen Energy* (3), and several *MDPI* (10) Journals. My [Publons](#) profile provides an overview of my recorded peer-reviewing activities.

SELECTED INVITED TALKS (full list [here](#))

1. **Invited** presentation “Surface-anchored All-inorganic Molecular Clusters for Light-driven Water Splitting Reactions” XIII International Symposium on Nano & Supramolecular Chemistry (ISNSC), Santa Margherita di Pula, Italy, 6-9.10.2024.
2. **Invited** talk "Heterogeneous Photocatalysis: from Fundamentals to our Research" at the Vienna Doctoral School in Chemistry Panel A Retreat, 2022, Bad Waltersdorf, Austria.
3. **Invited TEDx talk** on “Artificial photosynthesis: learning from nature, re-creating in the lab“ at the [TEDx TUWien](#) Event 2020. Available on [Youtube](#).
4. **Invited** presentation “State-of-the-art, challenges, and prospects of heterogeneous photocatalysis” at the Europe-Korea Conference on Science and Technology 2019 (EKC 2019), Vienna, Austria, 15-19.07.2019.
5. **Invited** presentation “Non-covalent wiring of CNT-metal oxide hybrid with Ru-based water oxidation catalyst for overall water-splitting” at the 22nd international conference on photochemical conversion and storage of solar energy (**IPS-22**), Hefei, China, 29.07-03.08.2018.

BOOK CHAPTERS

1. [A. Cherevan](#), P. Gebhardt, C. Shearer, D. Eder, “Nanocarbon Hybrid Materials”, book chapter in “Carbon Nanomaterials Sourcebook”, [CRC Press](#), **2016**.
2. C. J. Shearer, [A. Cherevan](#), D. Eder, “Application of Functional Hybrids Incorporating Carbon Nanotubes or Graphene”, book chapter in “Carbon Nanotubes and Graphene”, [Elsevier](#), **2014**.